

**NASA Space Shuttle Program (SSP)
Mission Management Team (MMT) STS-114
Minutes of Meeting
July 30, 2005**

The STS-114 Flight Day 5 (FD5) MMT meeting, chaired by Deputy Manager, SSP, JSC-MA/Wayne Hale, was held July 30, 2005 at 1:00 p.m. Central Time (CT), Johnson Space Center (JSC), Building 30, Room 118. Member organizations supported at JSC and remote sites by video teleconference. Roster sheets for those that participated in this meeting are available. Following are highlights of the issues that were discussed.

A. Introduction – MMT Chairman

Mr. Hale gave a few introductory remarks for the MMT.

B. Flight Status – Mission Operations Directorate (MOD) Failure Summary

JSC-DA/Phil Engelauf summarized FD5 mission events, including 1) extravehicular activity (EVA)-1, 2) Focused Inspection #2 of 7 Reinforced Carbon-Carbon (RCC) locations, 3) transfer status, and 4) the cryo margin towards an extra docked day. Mr. Engelauf stated that EVA-1 had gone very well, and all tasks had been completed. The FD6 timeline and upcoming Team 4 activities were also reviewed. Mr. Engelauf concluded that the mission is proceeding per the nominal timeline; however, a decision needs to be made by the MMT regarding adding an extra docked day to the schedule.

C. International Space Station (ISS)

JSC-OA/Scott Gahring reported that the crew had some difficulty opening the Multi-purpose Logistics Module (MPLM), but he was not sure whether this constituted an anomaly. He also stated that the current plan is to remove Control Moment Gyroscope (CMG) 3.

D. Mission Integration Status

JSC-MO/Robert Galvez provided a FD5 status and addressed action 114-MMT-006 to Flight Operations and Integration to assess the feasibility of changes to middeck and MPLM stowage and the impact assessment of increasing the mission by an additional docked day. This action remains open. Mr. Galvez stated that the primary purpose for the additional docked day is to provide the timeline margin for the crew to perform the changes to the middeck and MPLM manifest. JSC-MK/Greg Johnson stated that there are no constraints to a Monday (August 8, 2005) landing, except for a possible impact to the Atlas launch support for August 10, 2005. Mr. Galvez also reviewed the middeck manifest changes, specifically, the SSP hardware that would be left onboard the ISS. Mr. Galvez concluded by stating that an additional flight day would still help in providing timeline margin to address hardware transfer changes.

E. Orbiter and Government-Furnished Equipment (GFE) Status

Mr. Poulos reported that everything continues to function nominally. There have been 2 additional wing leading edge (WLE) impact detection events, bringing the total of WLE impact events to 13. There is a gap filler issue with a 1.1-inch protuberance, and the Aerothermal groups will be bringing a go-forward plan with a preliminary briefing on Sunday and a recommendation on Monday (FD7). JSC-EG/Chuck Campbell noted that RCC temperatures need to be considered. The MMT will also address the propellant margin.

The MMT assigned Action 114-MMT-007 to JSC Mission Operations Directorate (MOD) to develop an EVA procedure to eliminate concerns regarding protuberance of gap fillers and develop a plan to schedule an EVA activity for their repair. The action is due August 1, 2005. The MMT also assigned Action 114-MMT-008 to SSP Safety and Mission Assurance (S&MA) to evaluate the risk versus risk of performing an EVA to repair gap fillers versus flying as-is. This action is also due August 1, 2005.

Mr. Poulos also noted that the Non-Oxide Adhesive Experiment (NOAX) performed as expected, and the Emittance Wash was also successful. There were also no reported concerns regarding the RCC systems.

F. EVA

JSC-XA/Stephen Doering stated that the crew had experienced intermittent operation of one of the cameras, but the EVA had gone very well. The next EVA for the CMG will be performed at 3:15 a.m. CT on Monday, August 1, 2005.

G. Integrated Anomalies/Issues Summary

MSFC-MP71/Helen McConnaughey presented the Systems Engineering and Integration (SE&I) Integrated Anomalies list, located on the MMT website at:

http://sspweb.jsc.nasa.gov/webdata/mmtmeeting/flt/114/050730.1300_D5/12_Integrated_Anomalies_Issues_Summary.pdf

H. Action 114-MMT-003 Assessment for How Current External Tank (ET) Damage Relates to STS-300

Action 114-MMT-003 to MS, to assess how current ET damage relates to STS-300, was closed. JSC-MS/John Muratore reviewed the 10 sources of debris and their risk assessments. The liquid hydrogen (LH₂) Protuberance Airload (PAL) ramp classification is now rated as probable, which puts it in the 'red' area of the matrix. Every other risk assessment is still operating in 'yellow,' including the nose landing gear door (NLGD) tile and the bird impact, both of which were unexpected debris.

Mr. Muratore noted that there is nothing to upset the assumptions of the physics-based model being used right now. Mr. Hale noted that if Launch on Need (LON) is discussed,

an assessment will be needed from ET. This potential is still considered remote. However, STS-300 support will not be released on Sunday as previously discussed.

I. Thermal Protection System (TPS) Damage Summary

Boeing-KSC/Dan Bell summarized the TPS Damage Assessment, and showed photos and diagrams of the following identified areas:

- Damaged Side Window Blanket (Site 140-02) – No temperature limits are violated. The blanket qualified as a portion of redundant structure.
- Right Hand NLGD Tile Damage (Site 942-01) – Delta is a 12-degree increase in temperature. No stress tests are needed.
- Right Wing Chine Tile Damage (Site 221-01) – The margins of safety remain high.
- Left hand Inboard Elevon Tile Damage (Site 751-01) – The factor of safety did not change much. The team considers this issue closed.
- Left Wing Tile Damage (Site 702-01) – The damage was virtually all in the coating. This has been cleared, with no further issues.
- Protruding Ceramic Shim Aft of NLGD (Site 134-01) – The team will organize their story regarding this 1.1-inch protrusion based on the temperature response of STS-73 and its relevance to STS-114. Flight history indicates that STS-114 will experience Boundary Layer Transition (BLT) at or prior to Mach 18. An upper limit Mach number will be recommended within the next 24 hours.
- Protruding Chine Gap Filler (Site 133-01) – This is the second instance of protruding gap filler. The gaps are being assessed to determine if thermal evaluation is needed. The Damage Assessment Team will investigate the issue of the gap fillers being on the side of the vehicle (thus affecting RCC) rather than in the center as in STS-73.
- ET Door Thermal Barrier Nonconformance – This Material Review (MR) condition existed prior to flight. It is not seen as a safety of flight concern.

The Damage Assessment Team will report Monday on the temperature data, flight control data, and the RCC story. The EVA repair options are to either remove the gap filler from the gap (MMT preference) or trim it to within ¼ -inch of the surface.

J. Management Decisions Summary

As of July 30, 2005, the MMT has declared that the STS-114 mission will be increased by one docked day.

K. Conclusion

Mr. Hale stated that the next MMT is scheduled for 1:00 p.m. CDT, Sunday, July 31, 2005.

Detailed information on all assigned actions for this meeting can be found on the MMT Action log, located on the MMT web site at:

http://sspweb.jsc.nasa.gov/webdata/mmtmeeting/flt/114/050730.1300_D5/actionlog.pdf

MMT: July 30, 2005

The MMT web site is available at <http://sspweb.jsc.nasa.gov/mmt/>.

The meeting adjourned at 4:20 p.m. CT.

MMT: July 30, 2005

Minutes Prepared By:

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Minutes Writer	Date

Approvals:

<u>Jamie R. Shumbera</u>	<u>July 30, 2005</u>
MMT Secretary	Date

<u>J. J. Conwell</u>	<u>July 30, 2005</u>
Customer Support Room (CSR) Duty Officer	Date

MEETING ATTENDANCE ROSTER

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MEETING TITLE: STS-114 MMT Flight Day 05

LOCATION: JSC

DATE: 07/30/05

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DATE: 07/30/05

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DATE: 07/30/05

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DATE: 07/30/05

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